



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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February 10, 2003

TO: Minerals File

FROM: D. Wayne Hedberg, Permit Supervisor *DWH*

THRU: Mary Ann Wright, Associate Director *MAW*

RE: Bingham Canyon Mine Closure Plan Meeting, Kennecott Utah Copper Corporation (KUCC), Bingham Canyon Mine, M/035/002, Salt Lake County, Utah

Date of Meeting: January 31, 2003

Purpose of Meeting: To discuss latest KUCC iteration to their Closure & Reclamation Plan for the Bingham Canyon Mine.

Location of Meeting: Division Offices

Time of Meeting: 9:00 – 10:30 a.m.

Participants: Paula Doughty, Rich Borden & Vicky Peacey – KUCC; Doug Bacon – DERR; Dennis Frederick & Dan Hall – DWQ; Doug Jensen, Paul Baker, Susan White & Wayne Hedberg - DOGM

Based upon a KUCC telephone request, a meeting was held on January 31, 2003, to discuss KUCC's latest response to a September 17, 2002 joint agency technical review of KUCC's latest Bingham Canyon Mine closure plan. Rich Borden led the discussion by explaining the principal changes made to the plan as a result of our joint agency review comments.

Rich first explained that they had removed most of the previous language in the plan that referenced a suite of multiple reclamation/closure options. He said that the plan is redrafted to contain more concrete plans now that KUCC has a better idea of what they envision happening upon mine closure. He also stated that the plan now contains more geochemistry core hole data that has been collected and compiled from more recent drilling activities in the pit. Rich also stated that more waste dump geochemistry and physical analyses have been performed and are included in the plan.

Kennecott conducted a survey and is continuing to evaluate potential clean water resources across their properties. Rich said they had located 10 – 15 springs and a couple of adits producing clean water. They also contracted with a Kleinfelder consultant this past summer who performed a fracture mapping assessment of the upper drainage areas, in and around the pit, to determine the potential for using horizontal drains or other methods to intercept the clean water sources that would normally enter the pit and become contaminated.



Rich indicated that the plan also has more information concerning results of tailings geochemistry data. He stated that any reference to possible future underground block caving mining activities has been removed from the plan. Paula and Rich said that if their parent company eventually gives the go ahead to proceed with underground mining, then the mine and reclamation plan would need to be revised accordingly.

Dump reclamation plans were also discussed in a general overview with specific reference to the more recent January 2003 submittal for revising the plans for the lower Bingham Canyon Waste Dump proposal. Rich said that this plan was incorporated into the latest closure plan by reference. Rich pointed out that they have revised the reclamation plan somewhat in response to the multi-agency comments seeking more recontouring and revegetation efforts. He said the plan now contains a commitment to resample the geochemistry of the 3200 acres of re-contoured dumps after regrading efforts are completed to see if there are more favorable conductivity levels that would suggest revegetation efforts would be successful. He anticipated possibly 500 acres could potentially fall within this category. He said that there is only 15% of the waste dumps that would be "no further action planned" versus "no further action required" from the previous plan. Under the proposed plan, about 40 percent of the dumps will be revegetated and 45 percent simply regraded.

We discussed some of the revised revegetation plans and results from revegetation and soils studies KUCC has done. The revegetation seed mix has been revised but includes just one introduced species. Areas that KUCC is working to revegetate have an average of 47 percent cover with about five percent cover from weeds. There are no serious problems with weeds designated as noxious by the State of Utah, but Dalmatian toadflax, a noxious weed in some surrounding states, has done very well in some areas. Rich has devised a simple method to check for compaction and the need for ripping. It is tied to recording the number of blows it takes to drive a steel stake into the ground a standard depth with a heavy hammer. He also has determined that coarse rock fragments or gravel content below about 90 percent do not appear to inhibit plant growth in reclaimed spoils.

Rich stated that the ongoing Butterfield Canyon stabilization study was not completed yet, and consequently specific details were not included as part of the present closure proposal. This information could eventually become part of the plan based upon completion of the ongoing study. He stated that up to 30,000,000 cubic yards of material might have to be recontoured under one proposal at >\$1 a cubic yard. The waste dumps are over 700 feet high in this area.

We briefly discussed financial assurances for continued long-term water treatment requirements and how KUCC proposed to demonstrate that there would be adequate corporate resources to complete the required reclamation, especially in the unforeseen event that the mine went out of business. In recognition of KUCC's self-bonding agreement for the Bingham Pit, Susan asked if there was a reclamation bond cost estimate prepared that reflected the projected reclamation cost liability. We and the operator acknowledged that one did not currently exist, but that with further refinement of the closure and reclamation plan, we could begin to get a better handle on that figure. Paula acknowledged that KUCC was currently negotiating with Jerry Ellington of the Department of Justice and Eva Hoffman of EPA under CERCLA provisions to work out financial considerations for long term water treatment activities.



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They hope that the final details will be worked out within the next couple of months. She said after that, they may be in a better position to discuss other financial assurance concerns that the Division may have.

Doug Bacon discussed the need to do a better job of coordinating with DOGM as they work with KUCC and EPA on other CERCLA sites and the ROD's that are (and have been) developed for contaminated sites/facilities within KUCC's mine permit areas. He acknowledged that they may not have done a good job of coordinating these actions with the Division in the past but said they will try to do better here on out.

jb

cc: Paula Doughty, KUCC  
Dennis Frederick, DWQ  
Doug Bacon, DERR

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